

AMENDMENTS TO THE SPECIFICATION

Please make the following specified changes to the specification.

Please amend the paragraph that begins on page 7, line 29, as follows:

FIG. 7 is a sectional view of another embodiment of two coated LEDs according to the present invention separated from the sheet in FIG. 5;

Please amend the paragraph that begins on page 7, line 32, as follows:

FIG. 8 is a perspective view of one of the LEDs shown in FIG. 7;

Please amend the paragraph that begins on page 8, line 19, as follows:

FIG. 16 is a sectional view of one embodiment of two coated LEDs according to the present invention separated from the sheet in FIG. ~~11~~ 15;

Please amend the paragraph that begins on page 9, line 2, as follows:

FIG. 22 is a sectional view of one embodiment of two coated LEDs according to the present invention separated from the sheet in FIG. ~~11~~ 21;

Please amend the paragraph that begins on page 14, line 4, as follows:

The following is a list of only some of the phosphors and that can be used alone or in combination as the conversion material, grouped by the re-emitted color that each emits following excitation.

Please amend the paragraph that begins on page 16, line 29, as follows:

In step 38, the matrix material is cured such that the LEDs are at least partially embedded in the matrix material. In the embodiment where the formation cavity comprises parallel upper and lower surfaces, LEDs and matrix material form a sheet with the LEDs at least partially embedded in the matrix material. The matrix material is allowed to cure by the material's curing schedule either in room temperature, under light for optical curing, or at an elevated temperature for heat curing. In a preferred embodiment of the method 30, all surfaces of the LEDs are covered except for their bottom surface. In step 40 the sheet of LEDs and matrix material is removed from the ~~mold~~ mold's formation cavity, with one method being separating the upper and lower surfaces of the mold to release the sheet, although many other methods can also be used. In step 42, each LED can be singulated, preferably by separating the LEDs in the sheet into individual devices each of which has a similar thickness of matrix material around it. The methods described under step 20 of method 10 can be used, including sawing or dicing or scribe-and-break.

Please amend the paragraph that begins on page 18, line 13, as follows:

For each of the above methods, the mold's formation cavity can be provided without a top surface. In those embodiments the

matrix should be applied carefully and in a more controlled fashion to ~~proved~~ provide the desired thickness for the top layer in lateral LEDs and to prevent covering the top contact surface in vertical LEDs.

Please amend the paragraph that begins on page 18, line 21, as follows:

FIGs. 3 and 4 show one embodiment of a compact coating apparatus 50 according to the present invention that can be used to compact coat many different semiconductor devices, but is particularly adapted to compact coating lateral LEDs with a matrix material. The apparatus 50 includes a mold housing 51 comprising a lower section 52 that includes a bottom rigid support block 54 having LEDs 55 arranged on its top surface. The top surface 56 of the bottom support block 54 is preferably flat and the block 54 can be made of many different materials with many different thicknesses. The block material should not adhere to the LED or matrix material during the curing process. Suitable materials include aluminum, glass and stainless steel, and the bottom support block 54 should be thick enough that it does not flex during the layer formation process.

Please amend the paragraph that begins on page 20, line 10, as follows:

During the injection of the matrix material 70 and subsequent processing/curing steps, the distance between the lower and upper sections 52 and 61 should be maintained. The lower and upper sections 52 and 61 can have first and second vertical spacers 65, 66 (shown in ~~FIG. 2~~ FIGs. 3 and 4) running between them. The spacers 65, 66 are arranged to maintain the distance between the lower and upper sections 52 and 61 so that

the desired matrix material layer thickness is achieved on the top surface of the LEDs ~~54~~ 55. The spacers 65, 66 can be arranged in many different ways and can be formed as a single spacer around the edge of the entire formation cavity 68, or multiple spacers can be used.

Please amend the paragraph that begins on page 20, line 23, as follows:

The inside surfaces of the spacers 65, 66 further define the formation cavity 68 into which the matrix material 70 is injected. The matrix material 70 can be injected or introduced into the cavity 68 by many different methods according to the present invention. One such method comprises removing the upper section 61, injecting the material 70 into the cavity using a syringe, and replacing the upper section 61. Alternatively, the mold 50 can have an access opening through one of its rigid blocks 54, 62 or through one of its spacers 65, 66 so that the matrix material 70 can be injected into the cavity without removing either the lower and upper sections 52, 61 or one of the spacers 65, 66. The matrix material 70 can be made of the same material as described in step 36 of the method 30 above and preferably comprises phosphor conversion particles of one or more different type distributed uniformly throughout a curable epoxy, silicone or other polymer.

Please amend the paragraph that begins on page 24, line 29, as follows:

FIG. 15 shows the sheet 120 after it has been removed from the apparatus 100. FIG 16 shows individual coated LEDs 122 after they have been separated, with the preferred separation method being vertical cuts through the matrix material between adjacent

LEDs 102 to form cube shaped devices. ~~FIGs. 17 and 16 show~~ FIG. 17 shows LEDs 123 after being cut to match the angled sides of the LEDs ~~92~~ 102. This can be accomplished using the two cut method described above wherein a wider saw with and angled blade is used to cut the matrix material to a first depth 124 and a standard narrower blade is used to cut through the remainder of the matrix material. FIG. 18 shows the second contact 104 available for contacting with a first conductor 128 coupled to the second contact 104. A bottom conductor 129 is coupled to the LED's first contact 103 (shown in FIG. 17). A bias applied across conductors 128 and 129 causes the coated LED 102 to emit light.

Please amend the paragraph that begins on page 25, line 33, as follows:

Referring to FIG. 20, a matrix material 136 can be injected or otherwise introduced into the formation cavity covering the LEDs ~~123~~ 132 and the matrix material 136 can be cured such that the LEDs 132 become embedded in the matrix material 136.